CLAIM AMENDMENTS

1. (Currently amended) Apparatus for measuring the chromatic dispersion (CD) of an optical fiber, comprising:

- an optical source able to generate optical signals at variable wavelength;

- a signal generator able to generate modulation signals;

- a modulator able to generate modulated optical signals on the basis of said optical signals and of said modulation signals;

- a ~~coupler~~ coupling device able to send said modulated optical signals to a first end of said fiber; wherein:

- said signal generator comprises [[means]] an impulse generator able to generate impulsive electrical signals having variable amplitude, and having duration and periodicity determined according to the characteristics of said fiber, such that said modulated optical signals are shaped by pulses having variable amplitude;

- said fiber ~~comprises~~ has associated in correspondence with a second end a reflecting element able to reflect said modulated optical signals and to generate reflected optical signals having a reflected ~~modulation~~ modulated component; and [[by]]

- ~~comparator means~~ a comparator is associated to said first end of said fiber andable to measure the phase difference between said modulation signals and said reflecled ~~modulation~~ modulated component.

2. (Currently amended) Apparatus as claimed in claim 1 ~~characterised in that~~ wherein:

- ~~said coupler comprises means~~ coupling device is further able to receive said reflected optical signals; and

- said ~~comparison means~~ comparator comprises

- an optical receiver connected to said ~~coupler~~ coupling device and able to convert said reflected optical signals into electrical signals representative of said reflected ~~modulation~~ modulated component; and

- a phase comparator connected to said signal generator and to said optical receiver and able to generate an electrical signal representative of said phase difference.

3. (Currently amended) Apparatus as claimed in claim 2 further comprising

- a processor ~~control means~~ associated ~~respectively~~ to said optical source and to said signal generator and able

selectively to control the wavelength of said optical signals and the characteristics of said modulation signals.

4. (Currently amended) Apparatus as claimed in claim 3 wherein said ~~control means~~ processor ~~comprise computing means (18)~~ is further able to calculate the chromatic dispersion [[(CD)]] of said optical [[fibre]] fiber [[(50)]] on the basis of the phase difference measured as the wavelength of said optical signal varies.

5. (Currently amended) Method for measuring the chromatic dispersion of an optical fiber comprising the steps of

- generating optical signals at variable wavelength;

- generating modulation signals shaped by impulse electrical signals having predetermined phase, variable amplitude, and having duration and periodicity determined according to the characteristics of said fiber;

- modulating said optical signals with said modulation signals such that the optical signals modulated with said modulation signals are shaped by pulses having variable amplitude;

sending the said modulated optical signals modulated ~~with~~

~~said modulation signals~~ to a first end of said fiber;

- reflecting at a second end of said fiber said modulated optical signals in such a way as to obtain reflected optical signals having a reflected ~~modulation~~ modulated component;

- measuring in correspondence with said first end the phase difference between said modulation signal and said reflected ~~modulation~~ modulated component.

6. (Currently amended) Method as claimed in claim 5 characterised by the additional step of

- calculating the chromatic dispersion of said optical fiber on the basis of the phase difference measured as said wavelength of said optical signals varies.

7. (New) Method as claimed in claim 5 wherein the amplitude of said pulses is variable in sinusoidal fashion.

8. (New) Method as claimed in claim 5 wherein a duration of said pulses is no greater than twice a time of propagation of the pulses in said fiber.

9. (New) Method as claimed in claim 5 wherein a periodicity of said pulses is no less than four times a time of propagation of the pulses in said fiber.

10. (New) Apparatus as claimed in claim 1 wherein the amplitude of said pulses is variable in sinusoidal fashion.

11. (New) Apparatus as claimed in claim 1 wherein a duration of said pulses is no greater than twice a time of propagation of the pulses in said fiber.

12. (New) Apparatus as claimed in claim 1 wherein a periodicity of said pulses is no less than four times a time of propagation of the pulses in said fiber.